Listing of Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

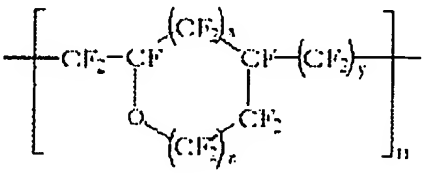
Claims 1.-3. (Canceled)

4. (Currently Amended) A pellicle ~~polymer~~ made by a process comprising:

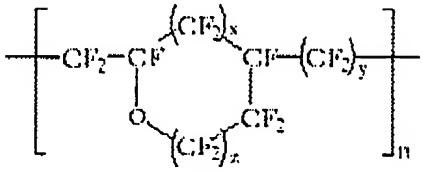
~~subjecting~~ fluorinating a surface of an already-formed polymeric film ~~pellicle polymer material to~~ using a technique that increases fluorine atoms ~~in or~~ on the ~~pellicle~~ film ~~polymer~~ surface while leaving the bulk unchanged.

5. (Original) The pellicle polymer of claim 4, wherein the technique is selected from the group consisting of ion beam fluorination, plasma fluorination, atomic layer deposition, and remote plasma deposition.

6. (Currently Amended) A polymer pellicle made by a process comprising subjecting a film comprising a PVDF, ~~a polytetrafluorethylene,~~ or a ~~CYTOP~~ material having the structure



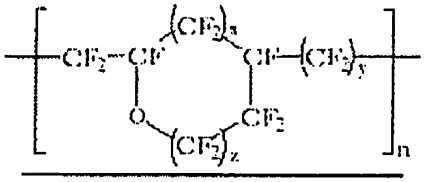
, post formation of the ~~material~~ film, to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition to provide PVDF, ~~Teflon AF~~ or ~~CYTOP~~ the material having the structure



~~having improved resistance against lithography~~.

7. (Canceled)

8. (Currently Amended) The polymer pellicle of claim ~~7~~ 6, wherein ~~the~~ durability of the polymer pellicle is improved at 157 nm wavelength compared to a standard PVDF, ~~Teflon AF,~~ or ~~CYTOP~~ a standard material having the structure



9. (Currently Amended) ~~A~~ The pellicle of claim 4, wherein the ~~polymer material~~ surface of the film is subjected, post formation of the ~~polymer material~~ film, to ion beam fluorination, plasma fluorination, atomic layer deposition,

and/or remote plasma deposition to improve the ~~polymer material's~~ film's optical properties, durability, and/or friction properties, wherein the optical properties, durability and/or friction properties are improved compared to a ~~polymer material~~ film that ~~is~~ has not been subjected to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition.

10. (Currently Amended) The pellicle ~~polymer material~~ of claim 9, wherein the optical properties and durability are improved at 157 nm compared to ~~polymer material~~ a film that ~~is~~ has not been subjected to ion beam fluorination, plasma fluorination, atomic layer deposition, and/or remote plasma deposition.

11. (Currently Amended) A ~~fluorinated polymer~~ pellicle made by a process comprising fluorinating a surface of an amorphous fluoropolymer, post formation of the ~~amorphous fluoropolymer~~ a pellicle from the amorphous fluoropolymer, by a method selected from ion beam fluorination, plasma fluorination, atomic layer deposition, and remote plasma deposition, wherein the surface of the amorphous fluoropolymer is ~~further~~ fluorinated while leaving the bulk unchanged.

12. (Currently Amended) The ~~fluorinated polymer~~ pellicle of claim 11, wherein the process results in the surface deposition of fluorine atoms or fluorine containing groups.

Claims 13.-15. (Canceled)

16. (New) An apparatus comprising:

a polymeric pellicle film having a transmissivity suitable for lithography, the pellicle film comprising

a treated surface having a composition characteristic of exposure to a fluorinating process, and

a bulk having a composition characteristic of remaining unchanged by the fluorinating process.

17. (New) The apparatus of claim 16, wherein the treated surface has a composition characteristic of exposure to fluorinated ions.

18. (New) The apparatus of claim 16, wherein the treated surface comprises implanted fluorinated species characteristic of plasma treatment with ions.

19. (New) The apparatus of claim 16, wherein the treated surface comprises a molecular layer that includes the reaction product of a monolayer of a first chemisorbed species and a second species.

20. (New) The apparatus of claim 19, wherein one of the first chemisorbed species and the second species comprises $CFR_1=CR_2R_3$, wherein each of R_1, R_2, and R_3 are, independent of one another, a fluorine atom or a monovalent fluorine-containing organic group, or wherein R_1 and R_2 form a bivalent fluorine containing organic group and R3 is a fluorine atom or a monovalent fluorine containing organic group, or wherein R_2 and R_3 form a bivalent fluorine-containing organic group and R_1 is a fluorine atom or a monovalent fluorine-containing organic group.

21. (New) The apparatus of claim 16, wherein the treated surface comprises a vapor deposited layer that is largely independent of the composition and surface properties of the bulk.

22. (New) The apparatus of claim 16, wherein the treated surface comprises a perfluorinated copolymer of tetrafluoroethylene and 2,2-dimethyl-1,3-dioxole, the copolymer perfluorinated to an extent characteristic of the pellicle film having been fluorinated after polymerization to eliminate hydrogen atoms from the polymer backbone in the treated surface.

23. (New) The apparatus of claim 16, wherein the pellicle film comprises an amorphous fluoropolymer.

24. (New) The apparatus of claim 23, wherein the amorphous fluoropolymer comprises PVDF.

25. (New) The apparatus of claim 23, wherein the amorphous fluoropolymer comprises a polymer having the structure